

Docket No.: TER-02P0020

MAIL STOP: APPEAL BRIEF-PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Before the Board of Patent Appeals and Interferences

Applic. No.	:	10/727,753	Confirmation No.:	7612
Inventor	:	Johann Meseth		
Filed	:	December 4, 2003		
Title	:	Containment of a Nuclear Power Plant		
TC/A.U.	:	3694		
Examiner	:	Daniel L. Greene		
Customer No.	:	24131		

Hon. Commissioner for Patents

Alexandria, VA 22313-1450

BRIEF ON APPEAL

Sir:

This is an appeal from the final rejection in the Office action dated October 30, 2008, finally rejecting claims 1 and 3 - 5.

Appellants herewith submit a second *Brief on Appeal* in the above-identified application. The fee in the amount of \$500.00 to cover the fee for filing the *Brief on Appeal* was paid on September 14, 2007. The remaining amount of \$40.00 is to be charged to counsel's deposit account No. 12-1099 of Lerner Greenberg Sterner LLP.

Real Party in Interest:

This application is assigned to Framatome ANP GmbH of Germany. The assignment will be submitted for recordation upon the termination of this appeal.

Related Appeals and Interferences:

No related appeals or interference proceedings are currently pending which would directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

Status of Claims:

Claims 1 and 3 - 5 are rejected and are under appeal. Claim 2 is canceled.

Status of Amendments:

No claims were amended after the final Office action.

Summary of the Claimed Subject Matter:

The subject matter of each independent claim is described in the specification of the instant application. Examples explaining the subject matter defined in each of the independent claims, referring to the specification by page and line numbers, and to the drawings, are given below.

Independent device claim 1 recites a containment (*Fig. 1, ref. # 10, page 9, line 17*) of a nuclear power plant, comprising:

a containment structure (*Fig. 1, ref. # 10, page 9, line 17*) having formed therein a pressure chamber (*Fig. 1, ref. # 18, page 9, lines 21-22*) and a condensation chamber (*Fig. 1 and 2, ref. # 14, page 9, lines 17-18*) with a base, said condensation chamber (*Fig. 1 and 2, ref. # 14, page 9, lines 17-18*) having a cooling liquid (*Fig. 1 and 2, ref. # 20, page 9, line 26*) therein, the cooling liquid (*Fig. 1 and 2, ref. # 20, page 9, line 26*) having a surface (*Fig. 1 and 2, ref. # 22, page 10, line 1*) defining a horizontal;

a vertical condensation tube (*Fig. 1 and 2, ref. # 28 and 28a, page 10, lines 14-15*) having an upper end communicating with said pressure chamber (*Fig. 1, ref. # 18, page 9, lines 21-22*) and a lower end immersed in the cooling liquid (*Fig. 1 and 2, ref. # 20, page 9, line 26*) in said condensation chamber (*Fig. 1 and 2, ref. # 14, page 9, lines 17-18*);

said lower end of said condensation tube (*Fig. 1 and 2, ref. # 28 and 28a, page 10, lines 14-15*) being formed with an elbow (*Fig. 2, ref. # 28c, page 14, lines 8-9*) leading into an outlet nozzle (*Fig. 2, ref. # 28d, page 14, line 15*);

said elbow (*Fig. 2, ref. # 28c, page 14, lines 8-9*) having an elbow angle (*Fig. 2, ref. # 28e, page 14, lines 9-10*) causing a lower end of said elbow (*Fig. 2, ref. # 28c, page 14, lines 8-9*) to be immersed obliquely with respect to the horizontal; and

said outlet nozzle (*Fig. 2, ref. # 28d, page 14, line 15*) of said condensation tube (*Fig. 1 and 2, ref. # 28 and 28a, page 10, lines 14-15*) being formed by a tube section having a beveled end (*Fig. 1 and 2, page 14, lines 16-19*) defining an outlet

opening directed towards the surface (*Fig. 1 and 2, ref. # 22, page 10, line 1*)
defining the horizontal.

Grounds of Rejection to be Reviewed on Appeal

1. Whether or not claims 1 and 5 are obvious over Krebs Figure 4 in view of U.S. Patent 4,986,956 to Garabedian and further in view of any of Nissel (DE 26 18 108), Itoya et al. (JP 0000550319 AA) (hereinafter "Itoya"), Stiefel (U.S. Patent No. 4,304,198), Schweiger (U.S. Patent No. 4,801,424) or Larsen et al. (U.S. Patent No. 5,122,333) (hereinafter "Larsen") under 35 U.S.C. § 103(a).
2. Whether or not claims 3 and 4 are obvious over Krebs Figure 4 in view of U.S. Patent 4,986,956 to Garabedian and further in view of any of Nissel (DE 26 18 108), Itoya (JP 0000550319 AA), Stiefel (U.S. Patent No. 4,304,198), Schweiger (U.S. Patent No. 4,801,424) or Larsen (U.S. Patent No. 5,122,333) and further in view of either Introduction to Fluid Mechanics second edition to John et al. or Piping Handbook Seventh edition to Nayyer for the reasons set forth in section 9 of the previous office action mailed 4/4/2008.

Argument:

Whether or not claims 1 and 5 are obvious over Krebs Figure 4 in view of
Garabedian and further in view of any of Nissel, Itoya, Stiefel, Schweiger, or Larsen
under 35 U.S.C. §103:

**Claims 1 and 5 are not obvious over Krebs Figure 4 in view of Garabedian
and further in view of any of Nissel, Itoya, Stiefel, Schweiger, or Larsen under
35 U.S.C. §103.**

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Claim 1 calls for, *inter alia*:

the outlet nozzle of the condensation tube being formed by a tube section having a beveled end defining an outlet opening directed towards the surface defining the horizontal.

The Examiner correctly stated on page 2 of the Office action that combination of Krebs and Garabedian does not disclose directing the outlet opening of the condensation tube towards the surface of the water within the suppression pool.

The outlet geometry as recited in the claims of the instant application, wherein the side of the outlet nozzle facing the base of the surrounding condensation chamber is longer than the side facing away from the base (so that the outlet opening is oriented towards the liquid level that lies above) cannot be derived without hindsight consideration, even when considering the newly cited references.

The following arguments are provided for each of the alternative references cited by the Examiner.

The Nissel reference discloses the avoidance of undesired pressure amplitudes when letting condensable gas or steam into a condensation tub filled with liquid. However, the solution provided in Nissel is only compatible in a sensible manner with Krebs, but not all with Garabedian. Nissel discloses a trumpet- or cone shaped steering body that is substantially radially symmetric (Fig. 2) that is inserted, with its narrow end, into the outlet region of the condensation pipe. The steering body is curved outside of the pipe and guides the medium **after the medium has exited the outlet** of the condensation pipe. This creates the desired flow by deflection. On account of the symmetric construction of the steering body and the mode of operation thereof the steering body would only be considered with an outlet opening that is not beveled. A person of ordinary skill in the art is not provided with any motivation to combine Nissel with a reference having condensation pipe with a beveled outlet end, such as disclosed by Garabedian. Besides that, no such steering body is provided in accordance with the invention, which would inappropriately narrow the outlet diameter of the condensation pipe. Furthermore, Nissel makes provision for the flow medium to flow out of the outlet opening of the condensation pipe in a substantially downward direction with subsequent rerouting into an approximately horizontal direction. However, Nissel does not disclose directing the outlet opening itself in an upward direction. Therefore, Nissel does not make of for the deficiencies of Krebs and Garabedian.

It is a requirement for a *prima facie* case of obviousness, that the prior art references must teach or suggest **all** the claim limitations.

As seen from the above remarks, the references do not show or suggest the outlet nozzle of the condensation tube being formed by a tube section having a beveled end defining an outlet opening directed towards the surface defining the horizontal, as recited in claim 1 of the instant application.

The Examiner correctly stated that combination of Krebs and Garabedian does not disclose directing the outlet opening of the condensation tube towards the surface of the water within the suppression pool.

As seen from the above-given remarks, Nissel does not make up for the deficiencies of Krebs and Garabedian.

The references applied by the Examiner **do not** teach or suggest all the claim limitations. Therefore, the Examiner has not produced a *prima facie* case of obviousness.

The following remarks pertain to the Schweiger reference.

Schweiger discloses that the medium guided through the condensation pipe exits via a plurality of exit nozzles arranged on a rotatable nozzle ring, respectively aligned upward in a slanted manner and tangentially to the circumference of the nozzle ring. This causes the nozzle ring to rotate, when flowing through, due to repulsion effects, which in turn generates a cyclone flow in the surrounding liquid tank. Schweiger discloses that the originally horizontal liquid surface changes into a more or less funnel shaped or parabolic surface due to the centrifugal force

accompanying the cyclone action (column 3, paragraph 2) of the rotating ring.

Therefore, when Schweiger is in use, there is no horizontal surface. Moreover, a complex system as disclosed by Schweiger has nothing in common with regard to the essential structural components or the mode of operation with the construction of a simple pipe disclosed, for example, in Krebs and provided with a bend section (section of curvature). Because the device pipe disclosed in Krebs does not include a rotation to create a cyclone effect and the sole reason for the orientation of the nozzle in Schweiger is to generate the cyclone effect, there is no motivation for a person of ordinary skill in the art to consider the Schweiger reference to modify a pipe outlet as disclosed by Krebs and or Garabedian.

The following remarks pertain to the Stiefel reference.

Similar to Krebs, Stiefel discloses a blowout pipe immersed in a liquid which has a section of curvature near the outlet side. Instead of a single nozzle, the outlet region (disposed along the side of the pipe) shows a type of grid so that a plurality of miniature nozzles (approximately 15,000) (column 3, lines 56-65) is realized. This provides a flow dynamic in the outlet region, which is completely different from Krebs. Stiefel does not provide any motivation for a person of ordinary skill in the art to modify Krebs and Garabedian, as defined in the instant application, while at the same time deviating from Stiefel and in doing so eliminating the nozzle grid.

The following remarks pertain to the Larsen reference.

Similar facts apply to Larsen, wherein relatively complex outlet geometries are realized as nozzle grids. The fact alone that, in this case, flow components directed upward occur in the respective outlet region is motivation for a person of ordinary skill in the art to combine Krebs with Garabedian in the manner as now provided in accordance with the invention. This is a case of hindsight reconstruction in view of the disclosure of the instant application, particularly, the required components are pieced together from a number of publications like a mosaic without a motivation for the combination.

The following remarks pertain to the Itoya reference.

Itoya discloses that the outlet nozzles are directed in a substantially horizontal direction and not upward toward a surface defining a horizontal. It appears that on page 5 of the Office action, the Examiner has modified a figure of Itoya to include arrows directed to the horizontal, however, there is no basis for the added arrows as the outlet opening are explicitly shown to be directed in a substantially horizontal directions.

It is a requirement for a *prima facie* case of obviousness, that the prior art references must teach or suggest all the claim limitations.

As seen from the above remarks, the references do not show or suggest the outlet nozzle of the condensation tube being formed by a tube section having a beveled end defining an outlet opening directed towards the surface defining the horizontal, as recited in claim 1 of the instant application.

The Examiner correctly stated that combination of Krebs and Garabedian does not disclose directing the outlet opening of the condensation tube towards the surface of the water within the suppression pool.

As seen from the above-given remarks, Itoya does not make up for the deficiencies of Krebs and Garabedian.

The references applied by the Examiner **do not** teach or suggest all the claim limitations. Therefore, the Examiner has not produced a *prima facie* case of obviousness.

The following further remarks pertain all of the references the Examiner attempts to use in the rejection.

Despite the fact that individual structural features of the subject matter of the application (as the Examiner himself emphasizes several times) have been known for quite some time, no reference could be found that shows all features.

On page 7 of the Office action the Examiner alleges that "...as well as the teachings of ANY of the other references above would indeed lead one to find that directing the opening towards the surface defining the horizontal would be an obvious arrangement of said opening for the obvious benefits thereof, i.e. directing the flow of effluent in a desired direction while minimizing chugging effects."

It is respectfully noted that the Examiner appears to have taken the result of “minimizing chugging effects” **directly from the specification of the instant application**. Particularly, **none of the references** which the Examiner relies on for showing openings directed in an upward direction, **disclose having any effect on chugging**. **It is only from page 14 of the specification of the instant application** that there is any disclosure of an outlet nozzle directed toward the horizontal surface having an effect on chugging. Therefore, the Examiner’s reason for combining the reference is based entirely on the specification of the instant application. However, it is impermissible, to use the disclosure of the instant application for supplying the motivation to combine references.

Therefore, applicants respectfully believe that any teaching, suggestion, or incentive possibly derived from the prior art is only present with hindsight judgment in view of the instant application. “It is impermissible, however, simply to engage in a hindsight reconstruction of the claimed invention, **using the applicant’s structure as a template** and selecting elements from references to fill the gaps. . . . The references **themselves** must provide some teaching whereby the applicant’s combination would have been obvious.” In re Gorman, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991) (emphasis added). Here, no such teaching is present in the cited references.

Moreover, the United States Supreme Court has recently reaffirmed Graham v. John Deere, 383 U.S. 1 (1966), as being the leading decision with regard to issues of obviousness under 35 U.S.C. § 103. KSR Int’l Co. v. Teleflex, Inc., No. 04-1350 (U.S. Apr. 30, 2007). According to Graham, it is incumbent upon the decision maker

to satisfy four prongs of a cumulative test, namely:

- (a) determine the scope and contents of the prior art;
- (b) ascertain the differences between the prior art and the claims in issue;
- (c) resolve the level of ordinary skill in the pertinent art; and
- (d) evaluate evidence of secondary consideration.

In addition, the Supreme Court validated the utilization of the "teaching, suggestion, or motivation" test in reviewing the question of obviousness, but rejected a stringent application of the analysis. Rather, the Court recognized that a showing of "teaching, suggestion, or motivation" to combine the prior art to meet the claimed subject matter could provide a helpful insight in determining whether the claimed subject matter is obvious under 35 U.S.C. § 103(a).

While the Court rejected a rigid application of the Teaching – Suggestion – Motivation (TSM) test, which essentially required the patent examiner to point to some teaching, suggestion, or motivation to combine the various teachings and/or elements of the prior art, the requirement for some proof of motivation has been retained. KSR did not do away with the requirement that the analysis supporting a rejection under 35 U.S.C. § 103(a) should be made explicit, and that it was "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements"; in the manner claimed. Further, it follows from the KSR decision that the combination should not be arbitrary but should be based on an apparent reason and the reason should be explicitly stated. However, in the present case, the Examiner has not met the above-noted requirements for a rejection under 35 U.S.C. § 103(a).

Since claim 1 is allowable, dependent claim 5 is allowable as well.

Whether or not claims 3 and 4 are obvious over Krebs Figure 4 in view of Garabedian and further in view of any of Nissel, Itoya, Stiefel, Schweiger, or Larsen and further in view of either John or Nayyer under 35 U.S.C. §103:

Claims 3 and 4 are not obvious over Krebs Figure 4 in view of Garabedian and further in view of any of Nissel, Itoya, Stiefel, Schweiger, or Larsen and further in view of either John or Nayyer under 35 U.S.C. §103

Neither John nor Nayyer make up for the deficiencies of Krebs, Garabedian, Nissel, Itoya, Stiefel, Schweiger and Larsen. Since claim 1 is allowable, dependent claims 3 and 4 are allowable as well.

The honorable Board is therefore respectfully urged to reverse the final rejection of the Primary Examiner.

If an extension of time is required for this submission, petition for extension is herewith made. Any fees due should be charged to Deposit Account No. 12-1099 of Lerner Greenberg Sterner LLP.

Respectfully submitted,

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Claims Appendix:

1. A containment of a nuclear power plant, comprising:

a containment structure having formed therein a pressure chamber and a condensation chamber with a base, said condensation chamber having a cooling liquid therein, the cooling liquid having a surface defining a horizontal;

a vertical condensation tube having an upper end communicating with said pressure chamber and a lower end immersed in the cooling liquid in said condensation chamber;

said lower end of said condensation tube being formed with an elbow leading into an outlet nozzle;

said elbow having an elbow angle causing a lower end of said elbow to be immersed obliquely with respect to the horizontal; and

said outlet nozzle of said condensation tube being formed by a tube section having a beveled end defining an outlet opening directed towards the surface defining the horizontal.

3. The containment according to claim 1, wherein said elbow angle of said elbow of said condensation tube is between 70° and 85°, whereby said lower end of said elbow is immersed in the cooling liquid in said condensation chamber with an oblique downward inclination.

4. The containment according to claim 3, wherein said elbow angle of said elbow is 82°.

5. The containment according to claim 1, wherein a portion of said condensation tube is embedded in a wall of said condensation chamber.

Evidence Appendix:

No evidence pursuant to §§ 1.130, 1.131, or 1.132 or any other evidence has been entered by the Examiner and relied upon by appellant in the appeal.

Related Proceedings Appendix:

No prior or pending appeals, interferences or judicial proceedings are in existence which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in this appeal. Accordingly, no copies of decisions rendered by a court or the Board are available.